



Louisville Metro Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137



15 July 2019

Federally Enforceable District Origin Operating Permit Statement of Basis

Source: Packaging Unlimited
1121 West Kentucky Street
Louisville, KY 40210

Owner: Stronghaven, Inc
1121 West Kentucky Street
Louisville, KY 40210

Application Documents: See Table 8 in section I

Public Comment Date: 05/30/2019

Permitting Engineer: Yiqiu Lin

Permit Number: O-0601-19-F

Plant ID: 0601

SIC: 2653

NAICS: 322211

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

This permit action performs scheduled permit renewal for FEDOOP source. This permit action also incorporates construction permit C-0601-19-0001-F for new flexographic printing presses and cutter and a new insignificant activity gluer.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), particulate matter less than 10 microns (PM₁₀), and is unclassifiable for particulate matter less than 2.5 microns (PM_{2.5}). Jefferson County is classified as a nonattainment area for ozone (O₃). This facility is located in the portion of Jefferson County that is an attainment area for sulfur dioxide (SO₂).

Permit Application Type:

☐ Initial issuance

☐ Permit Revision

☒ Permit renewal

☐ Administrative

☐ Minor

☐ Significant

Compliance Summary

☒ Compliance certification signed

☐ Compliance schedule included

☐ Source is out of compliance

☒ Source is operating in compliance

I. Source Information

1. **Product Description:** Packaging Unlimited designs and manufactures packing boxes, retail display, and specialty packaging containers.
2. **Process Description:** Packaging Unlimited operates flexographic printing presses, cutters, folders, and gluing machines to manufacture customized cardboard boxes.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
U1	E1: One (1) 2-color flexographic press, make McKinley, rated 10,000 sheets/hr, print area 66"x170", with cardboard cutting E2: One (1) 4-color flexographic press, make Hycorr, rated 10,000 sheets/hr, print area 66" x 130", with cardboard cutting E3: One (1) 2-color flexographic press, make McKinley, rated 10,000 sheets/hr, print area 66" x 115", with cardboard gluing and cutting E5: One (1) 2-color flexographic press, make Lattitude, rated 18,000 sheets/hr, print area 25" x 70", with cardboard gluing and cutting E30: One (1) 3-color flexographic press, make Ward, model 12000, rated 10,000 sheets/hr, print area 50" x 110", with cardboard gluing and cutting
U2	E8: One (1) horizontal foam saw, make Gelma, model 0579, capacity: 15 sheets/hr E9: One (1) cardboard baler with process cyclone, make Maren 720E, model 0025, capacity: 3 tons/hr E31: One (1) cardboard cutter, make Baysek, model C170, capacity 1,100 sheets/hr
IA1	E10: One (1) 36# cardboard band saw, make Wellsaw, model W20, 100 sheets/hr E11: One (1) 120" cardboard splitter, make Global, model L-10-5, 100 sheets/hr E12: One (1) cardboard belt splitter, make Universal, model M-1999, 750 sheets/hr E13: One (1) cardboard die cutter, make Thompson, model ESL 2080, 500 sheets/hr E15: One (1) vertical foam saw, make Edge Industries, model C1-3, 15 sheets/hr E16: One (1) foam band saw #1, make Doall, model 3—HSV, 34 foam pieces/hr E17: One (1) foam band saw #2, make Milwaukee Tool & Machine Company, model 119-23, 34 foam pieces/hr E18: One (1) foam die cutter, make ATOM, model 300M, 135 foam pieces/hr
IA2	E19: One (1) folder/gluer, make Post Machinery, model P956, 500 sheets/hr E21: One (1) bulk laminator, make Black Brothers, model 85208, 50 sheets/hr E22: One (1) hot melt roller gluing machine #1, make Freeman, 200 sheets/hr E23: One (1) hot melt roller gluing machine #2, make Freeman, 200 sheets/hr E24: One (1) label laminators #2124, make Potdevin, model NTZ, 150 sheets/hr E25: One (1) hand label laminators #2125, make Potdevin, 150 sheets/hr E32: One (1) glue gun, make Valco Melton, model E4-E, 50 sheets/hr
IA3	E28: One (1) cold solvent parts washer, make Safety Kleen, equipped with a secondary reservoir, Capacity 25 gallons

5. **Fugitive Sources:** There are no fugitive source emissions at this facility.

6. **Permit Revisions:**

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
27713-13-F	2/8/2014	3/13/2014	Initial	Contains equipment found in District permits 270-87-E, 125-92-O, 136-96-O and 34160-12-C
O-0601-17-F	1/12/2017	2/20/2017	Admin.	Updated to current permit format and includes Name and Ownership change.
			Sig.	Remove single and total HAP limits as they do not need them and add PM10 limits to Plant-Wide Emission Unit to avoid being subject to STAR; addition of references to PM10 plant-wide emission unit throughout. Updated General Condition 10. Added Permit Renewal-Related documents table.
O-0601-19-F	5/30/2019	7/15/2019	Renewal	Permit renewal; incorporated construction permit C-0601-19-0001-F for new flexo presses and cutter; addition of new I.A. gluer.

7. **Construction Permit History:**

Permit No.	Effective Date	Description
270-87-C	10/19/1987	Operating permit for one (1) cyclone separator and paper baling system with associated duct work consisting of 5 ducts with inline blower/shredders and multiple pick-up stations from 4 flexographic presses, 1 shredding machine and 4 die cutters.
125-92-O	1/30/2003	Operating permit for a Flexographic printing operation using water-based inks with four (4) machines as follows: One (1) McKinley two-colors; one (1) Maramatsu one-color, and one (1) Hycor 4-color, for printing, cutting, and creasing; one (1) McKinley two-color, for printing, cutting, creasing, and gluing.
136-96-O	1/30/2003	Operating permit for a 4-color flexographic Printer, Martin, Flexocompact, Model No. 1224, and a Hooper/Swift 143 Flexographic printer, which also includes slotting, rotary die cutting, gluing, and folding processes.
34160-12-C	1/30/2012	Construction permit for one (1) 2-color 18,000 sheets/hr Latitude Flexographic Press.
C-0601-19-0001-F	5/28/2019	Construction permit for one (1) 3-color 10,000 sheets/hr flexographic press with cardboard gluing and cutting, one (1) 1,100 sheets/hr die cutter.

8. Permit Renewal-Related Documents

Document Number	Date Received	Description
27713	5/4/2009	Original Application
57304	7/17/2013	Application to become STAR exempt, accept limits of 35 tpy of regulated air pollutant, 5 tpy of a HAP, and 12.5 tpy of combined HAPs.
78273	7/13/2016	Application for company name change
78275	7/13/2016	Certificate of Existence
96448, 96464	12/11/2018	FEDOOP renewal application submitted and District's receipt.
96837, 96873	1/25/2019 1/28/2019	Correspondences for site visit schedule
96958, 97016	2/1/2019 2/7/2019	Updated Form 100B for FEDOOP renewal submitted

9. Emission Summary:

Pollutant	District Calculated Actual Emissions (ton/yr) 2009 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	0	No
NO _x	0	No
SO ₂	0	No
PM ₁₀	1.25	No
VOC	5.82	Yes
Total HAPs	0	No
Single HAP	0	No

10. Emission Summary:

☐ 40 CFR 60 ☒ SIP ☐ 40 CFR 63
☐ 40 CFR 61 ☒ District Origin ☐ Other

11. Referenced MACT Federal Regulations: The source has no MACT requirements.

12. Referenced non-MACT Federal Regulations: There are no federal regulations for this source.

II. Regulatory Analysis

1. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Packaging Unlimited does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.
2. **Prevention of Accidental Releases 112(r):** Packaging Unlimited does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
3. **Basis of Regulation Applicability**

- a. **Plantwide**

Packaging Unlimited is a potential major source for the pollutant VOC. Regulation 2.17 – Federally Enforceable District Origin Operating Permits establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. The source requested limit of the criteria pollutant VOC < 25 ton/yr to be a synthetic minor source.

Regulations 5.00 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. Packaging Unlimited took the total plantwide limits of 25 tpy for VOC, PM/PM₁₀/PM_{2.5} to be a FEDOOP STAR Exempt source as defined by Regulation 5.00, section 1.13.5.

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued to submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

b. **Emission Unit U1 – Flexographic Printing Presses**i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E1: One (1) 2-color flexographic press, make McKinley	10,000 sheets/hr	1992	6.29, 7.08	Regulation 6.29 applies to volatile organic compound emissions from graphic arts facilities that use rotogravure or flexographic printing. Regulation 7.08 establishes the requirements for PM emissions from new processes that commence construction after September 1, 1976.
E2: One (1) 4-color flexographic press, make Hycorr	10,000 sheets/hr	1992		
E3: One (1) 2-color flexographic press, make McKinley	10,000 sheets/hr	1992		
E5: One (1) 2-color flexographic press, make Lattitude	18,000 sheets/hr	2011		
E30: One (1) 3-color flexographic press, make Ward, model 12000	10,000 sheets/hr	2018		

ii. **Standards/Operating Limits**(1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

(2) **PM/PM₁₀**

- (a) Emission standard for PM for the equipment in the emission unit was determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM limit (lb/hr)} = 3.59 \times (\text{process weight, tons/hr})^{0.62}$$

- (b) See Plantwide section for PM₁₀ requirements.

(3) **VOC**

- (a) Regulation 6.29, section 3.1 specifies operating parameters for pieces of equipment that emit the pollutant VOC.

- (b) Regulation 6.29, sections 3.2 and 3.3 detail the methods of demonstrating compliance with the operating parameter requirements.
- (c) See Plantwide section for additional VOC requirements.

iii. **Monitoring and Recordkeeping**

(1) **VOC**

- (a) Regulation 6.29, section 6 establishes specific record keeping requirements for this equipment.

c. **Emission Unit U2 – Cardboard and Foam Processing Equipment**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E8: One (1) horizontal foam saw, make Gelma, model 0579	15 sheets/hr	2009	7.08	Regulation 7.08 establishes the requirements for PM emissions from new processes that commence construction after September 1, 1976.
E9: One (1) cardboard baler with process cyclone, make Maren 720E, model 0025	3 ton/hr	1987		
E31: One (1) corrugated cardboard cutter, make Baysek, model C170	1,100 sheets/hr	2015		

ii. **Standards/Operating Limits**

(1) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

(2) **PM/PM₁₀**

- (a) Emission standard for PM for the equipment in the emission unit was determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM limit (lb/hr)} = 3.59 \times (\text{process weight, tons/hr})^{0.62}$$

- (b) District permit 270-87-C, with an effective date of October 19, 1987, established an emission for the baler operation (emission point E9). The emissions from the baling operation are limited to 4.86 tons during a 12 consecutive month period.
- (c) See Plantwide section for PM₁₀ requirements.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Alternative Operating Scenarios:** The source did not request any alternative operating scenarios.
5. **Compliance History:**

There are no records of any violations of the terms of the present or prior construction or operating permits.

6. Calculation Methodology or Other Approved Method:

To calculate actual emissions for any emission unit, the following emission factors and calculation methodology shall be used unless other methods or emission factors are approved in writing by the District.

Unit ID	Emission Point Description	Pollutant	Calculation Method	Emission Factors	Control Device & Efficiency
U1	E1, E2, E3, E5, E30 – flexographic presses	PM/PM ₁₀	PM/PM ₁₀ (lbs) = scrap weight ¹ (lbs) (0.1%)	0.1% of scrap	N/A
		VOC	Mass balance method: VOC (lbs) = material usage (lbs or gal) × VOC content (% or lb/gal)	VOC content per MSDS	N/A

¹ “Scrap weight” is the scrap (waste material) collected after the processing. It can be calculated by:
Scrap weight (lbs) = (weight of raw material, lbs) – (weight of product, lbs)

Unit ID	Emission Point Description	Pollutant	Calculation Method	Emission Factors	Control Device & Efficiency
U2	E8: foam saw	PM/PM ₁₀	PM/PM ₁₀ (lbs) = material removed ² (lbs) (31.0%) (1 – 75%)	31.0% of saw dust	75%, Dust collector
	E9: baler E31: cutter	PM/PM ₁₀	PM/PM ₁₀ (lbs) = scrap weight (lbs) (0.1%)	0.1% of scrap	N/A
IA1	E10: band saw E15: foam saw E16: band saw E17: band saw	PM/PM ₁₀	PM/PM ₁₀ (lbs) = material removed (lbs) (31.0%)	31.0% of saw dust	N/A
	E11: slitter E12: slitter	PM/PM ₁₀	PM/PM ₁₀ (lbs) = material removed (lbs) (2.6%)	2.6% of saw dust	N/A
	E13: die cutter E18: die cutter	PM/PM ₁₀	PM/PM ₁₀ (lbs) = scrap weight (lbs) (0.1%)	0.1% of scrap	N/A
IA2	E19: gluer E21: laminator E22: gluing E23: gluing E24: laminator E25: laminator E32: glue gun	VOC	Mass balance method: VOC (lbs) = material usage (lbs or gal) × VOC content (% or lb/gal)	VOC content per MSDS	N/A
IA3	E28: parts washer	VOC	Mass balance method: VOC (lbs) = material usage (lbs or gal) × VOC content (% or lb/gal)	VOC content per MSDS	N/A
	Oil storage drums	VOC	Use EPA TANK4.0 Program, Or Use PTE: 5.0E-6 tpy for each drum	N/A	N/A

7. Insignificant Activities

Equipment	Qty.	PTE (tpy)	Regulation Basis
36" band saw (See unit IA1)	1	0.32 PM ₁₀	Regulation 1.02, section 1.38
Global slitter (See unit IA1)	1	0.11 PM ₁₀	Regulation 1.02, section 1.38
Universal belt slitter (See unit IA1)	1	0.11 PM ₁₀	Regulation 1.02, section 1.38
Thompson die cutter (See unit IA1)	1	2.67 PM ₁₀	Regulation 1.02, section 1.38
Vertical foam saw (See unit IA1)	1	1.27 PM ₁₀	Regulation 1.02, section 1.38
Foam band saw #1 (See unit IA1)	1	0.08 PM ₁₀	Regulation 1.02, section 1.38
Foam band saw #2 (See unit IA1)	1	0.08 PM ₁₀	Regulation 1.02, section 1.38
Atom foam die cutter (See unit IA1)	1	0.19 PM ₁₀	Regulation 1.02, section 1.38

² "Material removed" is the material removed by blade (saw dust). It can be calculated by:

$$\text{Material removed (lbs)} = (\text{total cutting length, ft})(\text{board thickness, ft})(\text{blade thickness, ft})(\text{density, lb/ft}^3)$$

Equipment	Qty.	PTE (tpy)	Regulation Basis
Post folder/gluer (See unit IA2)	1	0.14 VOC	Regulation 1.02, section 1.38
Bulk laminator (See unit IA2)	1	0.13 VOC	Regulation 1.02, section 1.38
Hot melt roller #1 (See unit IA2)	1	0.10 VOC	Regulation 1.02, section 1.38
Hot melt roller #2 (See unit IA2)	1	0.10 VOC	Regulation 1.02, section 1.38
Pot Devin laminator #2124 (See unit IA2)	1	0.15 VOC	Regulation 1.02, section 1.38
Pot Devin Laminator #2125 (See unit IA2)	1	0.15 VOC	Regulation 1.02, section 1.38
Glue gun, Valco Melton (See unit IA2)	1	0.13 VOC	Regulation 1.02, section 1.38
Parts washer (See unit IA3) (cold solvent parts cleaners that are equipped with a functional secondary reservoir into which solvent drains during use)	1	0.32 VOC	Regulation 1.02, Appendix A
Oil storage drums (Storage of lubricating oils or fuel oils with a vapor pressure less than 10 mm Hg at conditions of 20°C and 760 mm of Hg)	10	5E-6 VOC	Regulation 1.02, Appendix A
Propane storage cylinders (pressurized storage vessel)	28	0	Regulation 1.02, Appendix A

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

8. Basis of Regulation Applicability for IA Units

a. Emission Unit IA1 – Miscellaneous Cardboard/Foam Cutting Equipment

i. Equipment:

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E10: One (1) 36# cardboard band saw	100 sheets/hr	2009	7.08	Regulation 7.08 establishes the requirements for PM emissions from new processes that commence construction after September 1, 1976.
E11: One (1) 120" cardboard slitter	100 sheets/hr	2009	7.08	
E12: One (1) cardboard belt slitter	750 sheets/hr	2009	7.08	
E13: One (1) flat cardboard die cutter	500 sheets/hr	2009	7.08	
E15: One (1) vertical foam saw	15 sheets/hr	2009	7.08	
E16: One (1) foam band saw #1	34 foam pieces/hr	2009	7.08	
E17: One (1) foam band saw #2	34 foam pieces/hr	2009	7.08	
E18: One (1) foam die cutter	135 foam pieces/hr	2009	7.08	

ii. Standards/Operating Limits

(1) Opacity

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

(2) PM/PM₁₀

- (a) Emission standard for PM for the equipment in the emission unit was determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM limit (lb/hr)} = 3.59 \times (\text{process weight, tons/hr})^{0.62}$$

- (b) See Plantwide section for PM₁₀ requirements.

b. **Emission Unit IA2 – Miscellaneous Gluing Operations**i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
One (1) cardboard folder/gluer	500 sheets/hr	2009	2.17	Regulation 2.17 establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.
One (1) cardboard bulk laminator	50 sheets/hr	2009		
One (1) hot melt roller gluing machine #1	200 sheets/hr	2009		
One (1) hot melt roller gluing machine #2	200 sheets/hr	2009		
One (1) hand label laminators #2124	150 sheets/hr	1987		
One (1) hand label laminators #2125	150 sheets/hr	2009		
One (1) glue gun	50 sheets/hr	2016		

ii. **Standards/Operating Limits**(1) **VOC**

(a) See Plantwide for additional VOC requirements.

c. **Emission Unit IA3 – Parts Washer**i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E28: One (1) cold solvent parts washer, make Safety Kleen, equipped with a secondary reservoir	25 gallons	2009	6.18	Regulation 6.18 applies to each solvent metal cleaning process operation.

ii. **Standards/Operating Limits**(1) **VOC**

(a) Regulation 6.18, section 4.1, 4.2, and 4.3 establish operating standards for cold solvent metal cleaning equipment.

iii. **Monitoring and Record Keeping**

(1) **VOC**

- (a) Regulation 6.18, section 4.4 establishes record keeping requirements for cold solvent metal cleaning equipment.